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FORM PTO-1396 (REV 12-29-99)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (if known, see 37 CFR 1.5) 10/089901	
INTERNATIONAL APPLICATION NO. PCT/GR 00/00018		INTERNATIONAL FILING DATE 21 April 2000		PRIORITY DATE CLAIMED 22 April 1999	
TITLE OF INVENTION FLEXIBLE DRINKING STRAW					
APPLICANT(S) FOR DO/EO/US FOTOPoulos, G., Anastasios					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. 3. <input type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1). 4. <input type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). 6. <input type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). 7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> have been transmitted by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). 					
Items 11. to 16. below concern document(s) or information included:					
<ol style="list-style-type: none"> 11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13. <input checked="" type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 14. <input type="checkbox"/> A substitute specification. 15. <input type="checkbox"/> A change of power of attorney and/or address letter. 16. <input checked="" type="checkbox"/> Other items or information: <div style="margin-left: 40px;"> I. Return Receipt Postcard #1 II. Small Entity Declaration of Inventor </div> 					

ENTRY INTO THE US NATIONAL PHASE

10089501 10/089901

PCT/GR 00/00018

Rec'd PCT/PTO 15 OCT 2001

ENTRY INTO THE US NATIONAL PHASE

International Application Number: PCT/GR 00/00018

International Filing Date: 21 April 2000

Priority Date Claimed: 22 April 1999

Title: FLEXIBLE DRINKING STRAW

Appn Number:

Appn Filed:

Examiner/GAU:

Date: October 09, 2001

UNITED STATES PATENT AND TRADEMARK OFFICE,

Commissioner for Patents

Washington, District of Columbia 20231

GENERAL

- I enclose the first page data of the PCT application.
- The Certified Priority Documents must be transmitted by the International Bureau.

PAYMENT OF THE NATIONAL FEE

I enclose a copy of the receipt of wire transfer through CITIBANK, for \$ 500 - nr. 3012630276 – September 20, 2001. I informed about it the Financial Accounting Division (Mr. Thomas Hellmer – Director) by fax and e-mail dated September 21, 2001.

From October 01, 2001 the Basic National Fee has been increased by \$ 15 (from \$ 430 to \$ 445). I enclose this sum (\$ 15) **in cash** to secure that I have paid the proper amount.

DOCUMENTS FOR THE US GRANT PROCEDURE

The basis for the procedure is the documents on which the International Preliminary Examination Report is based as they are amended now.

COMMENTS ON THE IPER

I. SECTION III.1 – Independent Claim 1.

I amend Independent Claim 1 according to Examiner's instructions.

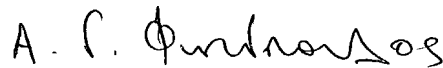
- The "... are not deformed ..." is replaced by "... have not been deformed ...".
- The "... in order to achieve ..." is replaced by "... in order that we achieve ...".

3/4

REQUEST FOR CONSTRUCTIVE ASSISTANCE

As the way of writing an application by the USPTO is quite different than by the EPO I respectfully request the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. § 2173.02 and § 707.07(j) in order that I can place this application in allowable condition.

Very respectfully,



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C L A I M S

3. The flexible drinking straws with one (or more) corrugated zone (flexible zone) consisting of re-entrant overlapping folds (annular bellows folds), which are attached to the packaging of fruit juices, milks, coffees etc. and are
5 permanently bent until their use in order to take up less space,

characterized in that

the corrugated zone (flexible zone) of the straw consists of expanded (unfolded) re-entrant overlapping folds (annular
10 bellows folds) that have not been deformed by force and contracted (folded) re-entrant overlapping folds (annular bellows folds) interspersed among the expanded ones so that not many consecutive expanded folds **2**, **5** exist without interference of one **3** or more **4** contracted ones, in order
15 that we achieve the best possible straightening up of the straw.

4. The flexible drinking straws, which are attached to the packaging of fruit juices, milks, coffees etc. and are
20 permanently bent until their use in order to take up less space, **according to claim 3**

wherein the first re-entrant overlapping folds (annular bellows folds) **1** of the corrugated zone (flexible zone) of the straw are contracted (folded), so that after straightening, the straw
25 may bend to all directions.

FLEXIBLE DRINKING STRAW

10/089901

The invention relates to flexible straws [with one (or more) flexible zone (corrugated zone) consisting of folding rings (annular bellows folds, reentrant overlapping folds)] which are attached to the packaging of fruit juices, milks, 5 coffees etc. and are bent to take up less space.

The straws used to date for this purpose have one flexible zone (corrugated zone) consisting of 8-10 folding rings (annular bellows folds, reentrant overlapping folds). 10 [The first (or the last) ring, being firm, is not counted as folding ring]. To bend to obtuse angles (e.g. 180°) due to the restricted number of rings, continuous external pressure has to be exercised. This pressure keeps being exercised by the packaging material afterwards as well. As a result the rings 15 are permanently deformed and straightening of the straw is not possible. Also a problem is posed by the fact that all rings are expanded (unfolded) after bending of the straw. (e.g. The U-shaped straws.)

20 The present invention, by increasing the number of rings and keeping certain of the rings folded (contracted), succeeds in straightening the straw up again almost without any damage and in bending the straw to all directions. Further, it increases the effective length of the straw.

25

Till now no one has thought to leave certain of the rings folded or simply to increase the number of rings so that they

are not deformed by force during bending of the straw.

The Letter Patents, **GB-A-1 219 595** (UNION CARBIDE
5 CORP. – 20 January 1971) and **US-A-3 641 884** (JIVOIN –
15 February 1972) refer to properties of the common,
straight, flexible drinking straws of general use.

No mention is made to straws which are attached to the
10 packaging of fruit juices, milks, coffees etc. and are
permanently bent until their use. Besides, approximately 28
years have lapsed since then but no one has thought of some
of the recommended innovations.

15 The advantage of the present invention is that it attains
complete straightening up and functionality of the straw
without a significant increase in the production cost and
without major changes in the current production line.

20 **FIG. 1** shows indicatively a straw in bent position, with
one flexible zone having certain rings folded.

To assist straightening up of the straw, when all its rings
are expanded after bending (like the case is until today), the
25 straw must have sufficient rings (more than ten), so that
when it bends, the rings are not deformed by force.

Further, the straw should not be under any form of
external pressure. Therefore the straw, after bending, is let
30 free to remain bent at the desired angle without external

pressure. Following this it can be packed in its final form.

If, in any way, more rings are expanded, than those
5 needed to bent the straw to the desired angle, then the extra
expanded rings lose their flexibility as the time passes and
do not bend to any direction.

To achieve the best possible straightening up and
10 functionality of the straw, even if stored for an extensive
period, there have to be sufficient rings so that after bending
of the straw, certain rings remain folded without, of course,
deformation of the expanded rings in a forceful way.

15 We aim at keeping the first rings (1) folded (e.g. 2-4 first
rings) so that after straightening, the straw may bend to all
directions thanks to the folded rings.

Straightening of the straw is considerably assisted by the
20 existence of interspersed folded rings among the expanded
ones, as well as around the middle of the arch formed by
bending of the straw, so that not many consecutive expanded
rings exist without interference of one (3) or more (4) folded
ones, particularly at the middle of the arch, where the biggest
25 amount of pressure is exercised [e.g. an expanded ring (2) is
followed by a folded ring (3)].

In order definite rings remain folded, apart from their
number certain other factors are of importance as well, like
30 the material, point (or points) at which pressure is exerted to

bend the straw, the shape and the position of fulcrum (or fulcrums) etc. (e.g. The pressure is applied on a fixed point and the position of the fulcrum changes as the straw bends).

5

As there exist extra rings, it is difficult for them to be deformed by force. For full scale application of the recommended changes there have to be sufficient rings (many more than ten folding rings).

10

In order the straw is not under any form of external pressure after bending, it is let free to remain bent at the desired angle without external pressure. Following this, it can be packed in its final form.

15

If something goes wrong in bending and some consecutive rings unfold (5) or some of the first rings unfolds this is not a serious problem and the straw straightens again (usually without any particular effort), because:

20

1. The rings are not deformed by force.
2. There will always be enough folded rings to support straightening of the expanded ones.

25

With the presence of folded rings, after bending of the straw, we can increase its effective length as well, because when it straightens and all rings are unfolded, it can bend, if we wish, at the first rings and the remaining section stays
30 straight and larger than respective section of the usual

straws.

In case the straw has more than one flexible zones
 5 (corrugated zones) consisting of folding rings (annular
 bellows folds, reentrant overlapping folds) [e.g. the S-shaped
 straws – **EP-A-0 327 244** (ELOPAK SYSTEMS AG)] the
 above are applied on all zones.

C L A I M S

1. The flexible drinking straws [with one (or more) flexible zone (corrugated zone) consisting of folding rings (annular bellows folds, reentrant overlapping folds)] which are attached to the packaging of fruit juices, milks, coffees etc. and are bent to take up less space, **are characterized in that**, the flexible zone (corrugated zone) consists of sufficient folding rings (annular bellows folds, reentrant overlapping folds) so that, after bending of the straw certain rings remain folded without deformation of the expanded rings in a forceful way.

2. The flexible drinking straws, which are attached to the packaging of fruit juices, milks, coffees etc. and are bent to take up less space, according to claim 1 **are characterized in that**, after bending of the straw, certain rings remain folded, interspersed among the expanded ones, as well as around the middle of the arch formed by the bending of the straw so that not many consecutive expanded rings exist without interference of one (3) or more (4) folded rings.

3. The flexible drinking straws, which are attached to the packaging of fruit juices, milks, coffees etc. and are bent to take up less space, according to claims 1, 2 **are characterized in that**, after bending of the straw, the first

rings (1) remain folded, so that after straightening, the straw may bend to all directions.

4. The flexible drinking straws, which are attached to the packaging of fruit juices, milks, coffees etc. and are bent to take up less space, according to claim 1, when all the rings of the straw are expanded after bending, **are characterized in that**, the straw has sufficient rings (more than ten), so that when it bends the rings are not deformed by force.

10

5. The flexible drinking straws, which are attached to the packaging of fruit juices, milks, coffees etc. and are bent to take up less space, according to claims 1, 2, 3, 4 **are characterized in that**, the straw, after bending, is let free to remain bent at the desired angle without external pressure, then it can be packed in its final form.

20

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

(54) Title: FLEXIBLE DRINKING STRAW

(57) Abstract

The invention relates to flexible straws [with one (or more) flexible zone consisting of folding rings] which are attached to the packaging of fruit juices, milks, coffees etc. and are bent to take up less space. The invention, by increasing the number of rings and keeping certain of the rings folded (1, 3, 4) succeeds in straightening the straw up again almost without any damage and in bending the straw to all directions. Further it increases the effective length of the straw. The advantage of the invention is that it attains complete straightening up and functionality of the straw without a significant increase in the production cost and without major changes in the current production line.

The diagram illustrates a flexible drinking straw. It consists of a straight section on the left and a curved section on the right. The curved section is formed by a series of overlapping, slightly offset rectangular rings. The straight section is a single rectangular tube. The drawing is labeled with numbers 1 through 5. Label 1 points to the bottom of the straight section. Label 2 points to the top of the curved section. Label 3 points to the top of the curved section. Label 4 points to the top of the curved section. Label 5 points to the top of the curved section.

1/1

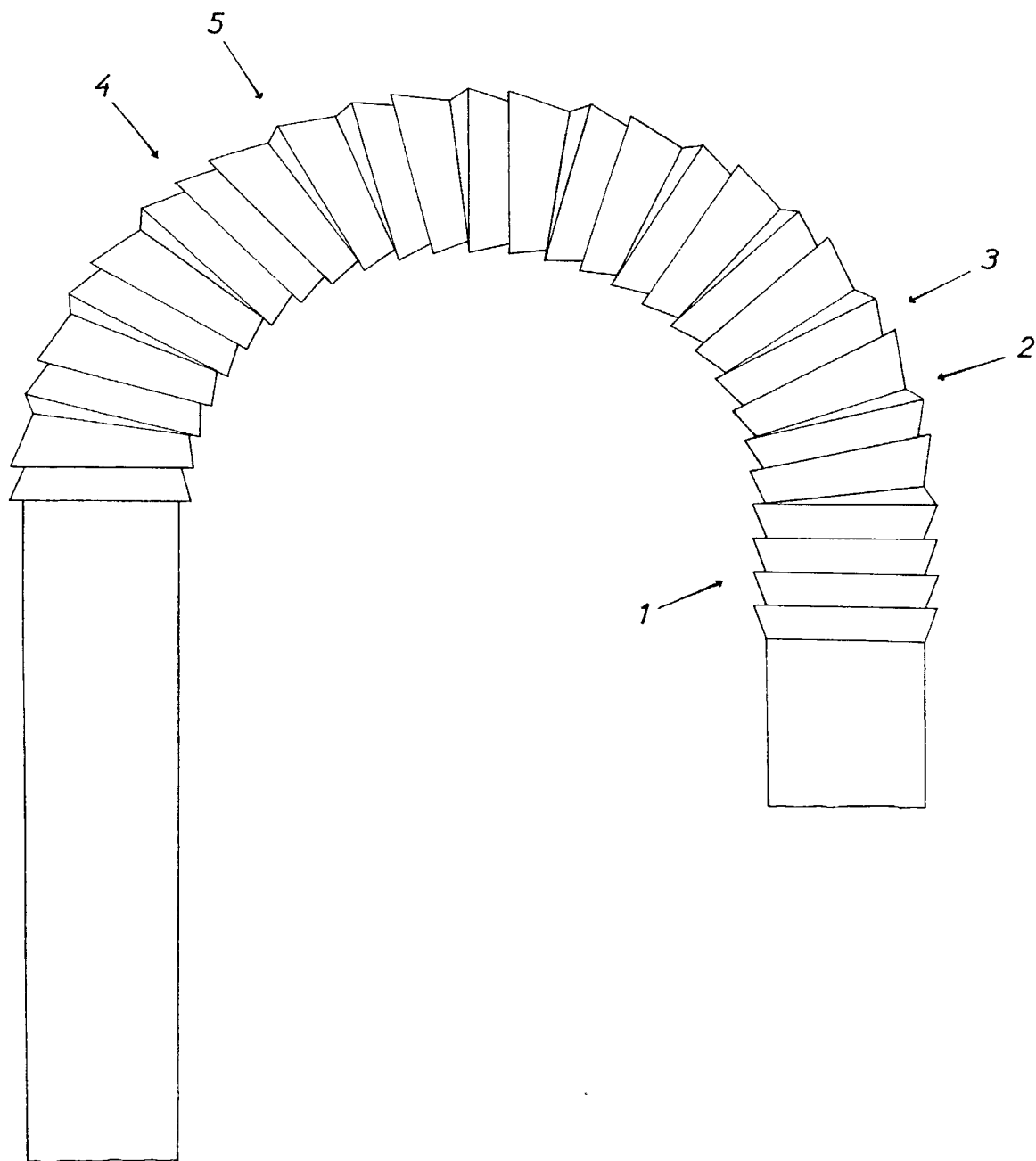


FIG. 1

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) <input checked="" type="checkbox"/> Declaration Submitted with Initial Filing OR <input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)	Attorney Docket Number	
	First Named Inventor	FOTOPOULOS, G., A.
	COMPLETE IF KNOWN	
	Application Number	/
	Filing Date	
	Group Art Unit	
		Examiner Name

As a below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

FLEXIBLE DRINKING STRAW

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 04/21/2000 as United States Application Number or PCT International

Application Number PCT/GR 00/00018 and was amended on (MM/DD/YYYY) 10/09/2001 (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
990100138	GREECE	04/22/1999	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION — Utility or Design Patent Application

Direct all correspondence to: <input type="checkbox"/>		Customer Number or Bar Code Label		OR <input checked="" type="checkbox"/>		Correspondence address below	
Name <u>MIKE GIAMALAKIS</u>							
Address <u>356 Scott Ave</u>							
City <u>Salt Lake City</u>				State <u>UTAH</u>		ZIP <u>84115</u>	
Country <u>USA</u>			Telephone <u>801 467 2372</u>			Fax <u>801 486 3336</u>	
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.							
NAME OF SOLE OR FIRST INVENTOR :				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
1-00 Given Name (first and middle [if any]) <u>ANASTASIOS GEORGIU</u>				Family Name or Surname <u>FOTOPOULOS</u>			
Inventor's Signature <u>A. C. Georgiou</u>						Date <u>10/09/2001</u>	
Residence: City <u>ATHENS</u>			State _____		Country <u>GREECE</u>		Citizenship <u>GREEK</u> GRX
Mailing Address <u>51 Zakynthou St.</u>							
City <u>Athens</u>			State _____		ZIP <u>113 62</u>		Country <u>GREECE</u>
NAME OF SECOND INVENTOR:				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle [if any]) _____				Family Name or Surname _____			
Inventor's Signature _____						Date _____	
Residence: City _____			State _____		Country _____		Citizenship _____
Mailing Address _____							
City _____			State _____		ZIP _____		Country _____
<input type="checkbox"/> Additional inventors are being named on the _____ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.							

**STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(b))—INDEPENDENT INVENTOR**

Docket Number (Optional)

Applicant, Patentee, or Identifier: FOTOPOULOS, G., Anastasios

Application or Patent No.: _____

Filed or Issued: _____

Title: FLEXIBLE DRINKING STRAW

As a below named inventor, I hereby state that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

- ☐ the specification filed herewith with title as listed above.
- ☒ the application identified above.
- ☐ the patent identified above.

I have not assigned, granted, conveyed, or licensed, and am under no obligation under contract or law to assign, grant, convey, or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ No such person, concern, or organization exists.
- ☐ Each such person, concern, or organization is listed below.

Separate statements are required from each named person, concern, or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

FOTOPOULOS, G., A.

NAME OF INVENTOR

NAME OF INVENTOR

NAME OF INVENTOR

A. F. Fotopoulos

Signature of Inventor

Signature of Inventor

Signature of Inventor

10/09/2001

Date

Date

Date